CLAIMS

1. In a mobile wireless communications device, a method for determining when to exit an existing wireless communications coverage network, the method comprising:

compiling a history of device geographical location data; and,

in response to the history of geographical location data, exiting the existing coverage network.

2. The method of claim 1 wherein compiling a history of geographical location data includes:

compiling accumulative data regarding device geographical location; and,

comparing the accumulative data to a predetermined terminal value.

3. The method of claim 2 wherein compiling accumulative data regarding device geographical location includes:

supplying the device geographical position;

measuring the position of each sample point with respect to a predetermined threshold boundary line; and,

performing a mathematical function in response to measuring position.

4. The method of claim 3 wherein supplying the device geographical position includes periodically supplying the device geographical position.

5. The method of claim 3 wherein performing a mathematical function in response to measuring position includes maintaining a running sum in response to measuring position.

6. The method of claim 5 further comprising:

determining the threshold boundary line; and,

using the threshold boundary line to partition, into first and second zones, an area including at least a portion of a coverage area for the existing coverage network and at least a portion of a coverage area for a second coverage network proximate the existing coverage network, the first zone proximate a first side of the threshold boundary line oriented toward the geographical center for the existing coverage network and the second zone proximate a second side of the threshold boundary line;

wherein maintaining a running sum in response to measuring position includes:

decrementing the running sum for sample point positions in the first zone; and,

incrementing the running sum for sample point positions in the second zone.

7. The method of claim 6 wherein exiting the existing coverage network includes exiting when the running sum is greater than the terminal value.

8. The method of claim 7 wherein measuring the position for each sample point with respect to a predetermined threshold boundary line includes assigning an accumulation amount to each sample point position; and,

wherein maintaining a running sum in response to measuring position includes using the accumulation amounts to change the running sum.

9. The method of claim 8 wherein measuring the position of each sample point with respect to a predetermined threshold boundary line includes:

measuring a first sample point position, in the first zone, a first perpendicular distance from a point on the boundary line; and,

measuring a second sample point position, in the second zone, a second perpendicular distance from the boundary line;

wherein assigning an accumulation amount to each sample point position includes assigning a first accumulation amount to the first sample point position and a second accumulation amount to the second sample point position;

wherein decrementing the running sum for sample point positions in the first zone includes using the first accumulation amount to decrement the running sum; and,

wherein incrementing the running sum for sample point positions in the second zone includes using the second accumulation amount to increment the running sum.

10. The method of claim 8 wherein measuring the position of each sample point with respect to a predetermined threshold boundary line includes:

measuring, in the first zone, a first plurality of sample point positions with an initial sample point position a third perpendicular distance, greater than the first perpendicular distance, from the boundary line and with each successive position a greater perpendicular distance from the threshold boundary line than a preceding position; and,

measuring, in the second zone, a second plurality of sample point positions with an initial sample point position a fourth perpendicular distance, greater than the second perpendicular distance, from the boundary line and with each

successive position a greater perpendicular distance from the boundary line than a preceding position;

wherein assigning an accumulation amount to each sample point position includes:

assigning a first plurality of successively larger accumulation amounts to respective positions in the first plurality of sample point positions, beginning with the initial sample point position; and,

assigning a second plurality of successively larger accumulation amounts to respective positions in the second plurality of sample point positions, beginning with the initial sample point position;

wherein decrementing the running sum for sample point positions in the first zone includes using respective accumulation amounts in the first plurality of accumulation amounts to decrement the running sum; and,

wherein incrementing the running sum for sample point positions in the second zone includes using respective accumulation amounts in the second plurality of accumulation amounts to decrement the running sum.

11. The method of claim 10 wherein a value of an initial amount in the first plurality of accumulation values, corresponding to

the initial position in the first plurality of sample point positions, is greater than the value of the first accumulation amount; and,

wherein a value of an initial amount in the second plurality of accumulation values, corresponding to the initial position in the second plurality of sample point positions, is greater than the value of the second accumulation amount.

12. The method of claim 8 wherein providing the device geographical position includes the device assisting in determining device geographical position.

13. The method of claim 8 wherein providing the device geographical position includes receiving device geographical position from a source external to the device.

14. The method of claim 8 wherein determining the threshold boundary line includes forming a threshold boundary line using a plurality of vectors referenced to the geographical center of the existing coverage network.

15. The method of claim 8 wherein determining the threshold boundary line includes adapting the threshold boundary line to dynamic conditions in a coverage network cell.

16. The method of claim 15 wherein adapting the threshold boundary line to dynamic conditions in a coverage network cell includes adapting to dynamic conditions in a Code Division Multiple Access (CDMA) cell.

17. The method of claim 1 further comprising:

compiling information regarding coverage areas for a plurality of wireless communications coverage networks within, overlapping, and proximate the existing wireless communications coverage network; and,

wherein determining the threshold boundary line includes using the compiled information to determine threshold boundary lines between the existing coverage network and the plurality of coverage networks.

18. The method of claim 1 wherein exiting the existing coverage network includes entering a second coverage network and re-configuring the wireless device from an existing coverage network operating system processor to a second coverage network operating system processor.

19. In a mobile wireless communications device, a system for determining when to exit an existing wireless communications coverage network, the system comprising:

a locator with a first output supplying device geographical sample positions; and,

a calculator with a first input connected to the locator first output and an output supplying an exit control signal responsive to a history of device geographical sample positions and a first predetermined threshold boundary line.

20. The system of claim 19 wherein the calculator includes:

a comparison circuit with:

a first input connected to the locator first input, the comparison circuit selecting the threshold boundary line and measuring the difference between each device geographical sample position and the first threshold boundary line in response to accepting device geographical sample positions; and,

first and second outputs to supply decrement and increment control signals, respectively, in response to the comparison;

a counting circuit with first and second inputs connected to the comparison circuit first and second outputs, respectively, the counting circuit performing a mathematical function responsive to accepting the decrement and increment control signals and

comparing a mathematical function result to a predetermined terminal value; and,

an output, connected to the calculator output, to supply the exit control signal in response to the comparison.

21. The system of claim 20 wherein the comparison circuit partitions, into first and second zones separated by the first threshold boundary line, an area including at least a portion of a coverage area for the existing coverage network and at least a portion of a coverage area for a second coverage network proximate the existing coverage network, the first zone proximate a first side of the threshold boundary line oriented toward the geographical center for the existing coverage network and the second zone proximate a second side of the threshold boundary line; and,

wherein the comparison circuit first output supplies a first decrement control signal in response to accepting a device geographical sample position in the first zone and the comparison circuit second output supplies a first increment control signal in response to accepting a device geographical sample position in the second zone.

22. The system of claim 21 wherein the counting circuit maintains a running total responsive to accepting the decrement and

increment control signals and compares the running total to the predetermined terminal value.

23. The system of claim 22 wherein the counting circuit includes:

a subtracting circuit with an input connected to the counting circuit first input and having an output supplying a first predetermined accumulation value in response to accepting the first decrement control signal;

an adding circuit with an input connected to the counting circuit second input and having an output supplying a first predetermined accumulation value in response to accepting the first increment control signal; and,

a totalizer with first and second inputs connected to the subtracting circuit output and the adding circuit output, respectively, and an output, connected to the counting circuit output, to supply the exit control signal.

24. The system of claim 23 wherein the totalizer maintains the running total starting at a predetermined initial value, decrements the running total for each first accumulation value, increments the running total for each second accumulation value, and compares the running total to the terminal value.

25. The system of claim 24 wherein the totalizer output supplies the exit control signal when the running total is greater than, or equal to the terminal value and resets the running total to the initial value after supplying the exit control signal.

26. The system of claim 20 further comprising:

a transceiver with an antenna port to receive threshold boundary line information and a first output to supply threshold boundary line information;

wherein the calculator has a second input connected to the transceiver first output; and,

wherein the comparison circuit has a second input connected to the calculator second input.

27. The system of claim 20 wherein the locator generates information regarding device sample positions.

28. The system of claim 20 wherein the transceiver antenna port receives device geographical sample positions determined by a source external to the wireless communications device and has a second output connected to the calculator first input to supply the positions.

29. The system of claim 20 wherein the comparison circuit forms threshold boundary lines using a plurality of vectors referenced to the geographical center of the existing coverage network.

30. The method of claim 20 wherein the transceiver first output supplies information regarding coverage areas for other wireless communications coverage networks within, overlapping, and proximate to the existing wireless communications coverage network; and,

wherein the comparison circuit determines threshold boundary lines between the existing coverage network and the other coverage networks in response to accepting coverage area information.

31. The system of claim 20 further comprising:

a digital integrated circuit (IC) operatively connected to the transceiver, the digital IC including an input; and,

a reconfiguration sub-system with an input connected to the calculator sub-system output and an output to supply reconfiguration information in response to the reconfiguration sub-system accepting an exit signal on the input; and,

wherein the transceiver includes an input connected to the reconfiguration sub-system output.